

WE CLAIM:

1. A telepresence system for allowing an operator to interact with a remote operating environment, the system comprising:

one or more input devices, wherein the one or more input devices produce raw data representative of operator commands;

a computer for receiving the raw data, the computer processing the raw data into a zone structure, wherein the zone structure is representative of the operator commands and is compatible with one or more telepresence devices; and

a communication link, wherein the operator commands in the zone structure are received by the one or more telepresence devices over the communication link such that the one or more input devices are configured to control the one or more telepresence devices, wherein the telepresence devices provide the operator with one or more visual representations of the operating environment.

2. A system as defined in claim 1, wherein the one or more input devices comprise one or more of: a headset, a keyboard, a mouse, and a joystick.

3. A system as defined in claim 1, wherein only one of the one or more input devices is permitted to produce raw data at a time.

1 4. A system as defined in claim 1, wherein one of the one or more input
2 devices is capable of controlling a plurality of the one or more telepresence devices.

1 5. A system as defined in claim 1, wherein the communication link is a
2 wireless communication link.

1 6. A system as defined in claim 1, wherein the one or more telepresence
2 devices comprise one or more of a stereo camera set, a zoom camera, a pan and tilt
3 device, a slider bar, and a robot.

1 7. A system as defined in claim 6, wherein the pan and tilt device is
2 connected to the stereo camera set and is capable of orienting the stereo camera set.

1 8. A system as defined in claim 6, wherein the pan and tilt device is
2 connected to the zoom camera and is capable of orienting the zoom camera.

1 9. In a system having input devices and telepresence devices, a method for
2 controlling one or more identified telepresence devices with a selected input device, the
3 method comprising the steps of:

4 receiving raw data from the selected input device;

5 converting the raw data into a zone structure, wherein the zone

6 structure is representative of movement commands;

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7 processing the zone structure with a device module for each
8 identified telepresence device to obtain the movement commands for each
9 identified telepresence device; and
10 transmitting the movement commands to the identified
11 telepresence devices.

1 10. A method as defined in claim 9, wherein the selected input device is one
2 of a headset, a keyboard, a mouse, or a joystick.

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4 11. A method as defined in claim 9, wherein the zone structure is compatible
5 with the telepresence devices.

1 12. A method as defined in claim 9, wherein the zone structure is capable of
2 representing a plurality of speeds and directions.

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1 13. A method as defined in claim 9, wherein the identified telepresence
2 devices only respond to portions of the zone structure that correspond to the axes of the
3 identified telepresence devices.

1 14. A method as defined in claim 9, wherein the raw data corresponds to
2 actions of an operator.

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15. A method as defined in claim 9, further comprising the step of executing the movement commands by the identified telepresence devices.

16. A computer readable medium having computer-executable instructions for performing the steps recited in claim 9.

17. In a system having input devices and telepresence devices, a method for configuring the system to provide one or more views, the method comprising the steps of:

for each of the one or more views:

selecting one or more telepresence devices;

selecting a single input device, wherein each of the

selected telepresence devices will be controlled by the

single input device;

storing the one or more views in a configuration module; and

configuring the system in accordance with the one or more views

defined in the configuration module.

18. A method as defined in claim 17, further comprising the step of executing one of the views stored in the configuration module.

19. A method as defined in claim 17, further comprising the step of switching to a different defined view.

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1 20. A method as defined in claim 17, further comprising the step of editing the
2 configuration module to add, delete or change a view.

1 21. A method as defined in claim 17, wherein the configuration module is a
2 text file.

1 22. A method as defined in claim 17, further comprising the step of switching
2 to a different view in response to a voice command from an operator.

1 23. A computer-readable medium having computer-executable instructions for
2 performing the steps recited in claim 17.

1 24. A telepresence system for allowing an operator to interact with a remote
2 operating environment, the telepresence system comprising:

3 a plurality of input devices;

4 a plurality of telepresence devices, wherein one or more of the
5 telepresence devices is configured to be controlled by one of the plurality
6 of input devices and one or more of the telepresence devices is configured
7 to provide a visual representation of the operating environment;

8 a computer comprising:

9 an input conversion module, the input conversion
10 receiving raw data from at least one of the plurality of input
11 devices and converting the raw data to a zone structure; and
12 a plurality of device modules corresponding to the
13 plurality of telepresence devices, wherein the device
14 modules receive the zone structure and convert the zone
15 structure to movement commands for each respective
16 telepresence device; and
17 a communication link for transmitting the movement commands to
18 the telepresence devices.

1 25. A system as defined in claim 24, wherein the telepresence devices
2 comprises one or more stereo camera sets each connected with a different pan and tilt
device and a zoom camera connected with another pan and tilt device.

1 26. A system as defined in claim 25, wherein the zoom camera is capable of
2 providing stereo vision.

1 27. A system as defined in claim 24, wherein the raw data generated by the
2 input devices correspond to zones, each zone representative of movement in a particular
3 direction and speed.
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5 28. A system as defined in claim 27, wherein the zone structure integrates any
6 of the input devices with one or more of the telepresence devices.

1 29. A system as defined in claim 24, wherein the computer further comprises a
2 configuration module.

1 30. A system as defined in claim 29, wherein the configuration module
2 comprises one or more views, wherein each view defines the one or more telepresence
3 devices controlled by a single input device.

1 31. A system as defined in claim 30, wherein the operator may select a
2 different view.

1 32. A system as defined in claim 29, wherein the one or more views stored in
2 the configuration module permits a single input device to control different groups of
3 telepresence devices.

1 33. A system as defined in claim 24, wherein the plurality of telepresence
2 devices provide the operator with a visual representation of the operating environment.

1 34. A system as defined in claim 33, wherein the visual representation
2 provides depth perception to the operator.

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1 35. A system as defined in claim 24, wherein the communications link is
2 wireless communication.

1 36. A system as defined in claim 24, wherein the plurality of input devices
2 allow the operator to control the telepresence devices without the use of the operator's
3 hands.

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